



IPW

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Toshio GOTO et al.

Group Art Unit: 2874

Application No.: 10/647,293

Examiner: Jennifer Doan

Filed: August 26, 2003

Docket No.: 116182

For: BROADBAND OPTICAL SPECTRUM GENERATING APPARATUS
AND PULSED LIGHT GENERATING APPARATUS

REQUEST FOR RECONSIDERATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the April 6, 2004 Office Action, reconsideration is respectfully requested in view of the following remarks.

Claims 1-21 are pending.

Applicants acknowledge and thank the Examiner for indicating that claims 8 and 11 are allowable. However, for reasons as discussed below, it is believed that all the claims 1-21 are allowable.

I. The Claims Define Patentable Subject Matter

The Office Action rejects claims 1-4 and 18-21 under 35 U.S.C. §102(e) over Onishi (U.S. Patent No. 6,347,174); and rejects claims 5-7 and 17 under 35 U.S.C. §103(a) over Onishi. The rejections are respectfully traversed.

In particular, Onishi does not disclose or suggest a broadband optical spectrum generating apparatus that converts short pulse light into a broadband optical spectrum, as recited in independent claim 1, and similarly in independent claims 9, 17 and 18.

Onishi instead discloses at col. 1, lines 10-15 a non-linear optical fiber for generating a nonlinear optical phenomenon with respect to input light. Specifically, Onishi discloses at col. 1, lines 21-33 that, an example of a nonlinear optical phenomenon, a second-harmonic generation is caused by a second-order nonlinear affect, in which, when two photons having the same energy enter the medium, a new single photon having a double energy is generated. Nowhere does Onishi disclose or even suggest a broadband optical spectrum that converts short pulse light into a broadband optical spectrum.

Furthermore, Onishi does not disclose or suggest a short pulse light source that emits pulsed light at a short interval, as recited in independent claim 1, and similarly recited in independent claims 9, 17 and 18. The Office Action on page 3 asserts that Onishi discloses this feature. Applicants respectfully disagree.

Onishi instead discloses at col. 19, lines 17-32 the desirability of using an excitation light source 17 that outputs excitation light having a predetermined wavelength. As an example, a wavelength-variable laser diode can be employed. Nowhere does Onishi disclose or even suggest the excitation light source emits pulsed light at a short interval.

Moreover, Onishi does not disclose or suggest a broadband optical spectrum-generating optical fiber that has a non-linear coefficient of no less than $10 \text{ [W}^{-1} \text{ m}^{-1}]$ at a wavelength of the pulsed light emitted from the short pulse light source, as recited in independent claim 1, and similarly recited in independent claims 9 and 18.

Onishi instead discloses at col. 6, lines 37-48 a non-linear optical fiber applicable to the wavelength converter having characteristics, among others a nonlinear coefficient of 10 W/km .

Therefore, independent claims 1, 9, 17 and 18 define patentable subject matter. Claims 2-8, 10-16 and 19-21 depend from the respective independent claims, and therefore also define patentable subject matter. Accordingly, withdrawal of the rejection under 35 U.S.C. §102(e) and 35 U.S.C. §103(a) is respectfully requested.

II. Conclusion

In view of the foregoing remarks, this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-21 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,


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Date: July 6, 2004

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